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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/719,585	11/21/2003	Tim Sievers	04087-P0001A	3272

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EXAMINER

DANIELS, MATTHEW J

ART UNIT PAPER NUMBER

1732

DATE MAILED: 09/28/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/719,585

Applicant(s)

SIEVERS ET AL.

Examiner

Matthew J. Daniels

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 July 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5, 7 and 8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 7 and 8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 5 July 2006 has been entered. In that response, Claim 1 was amended and Claims 7 and 8 are new.

Priority

2. Acknowledgment is made of applicant's claim for foreign priority based on application DE 101 24 795.8, filed on 21 May 2001. It is noted, however, that applicant has not filed a certified copy of the German application as required by 35 U.S.C. 119(b).

Double Patenting

3. The rejections set forth previously under this section are withdrawn in view of the amendments and arguments on pages 8-11 of the 5 July 2006 response.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

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having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. **Claims 1, 2, 4, 5, 7 and 8** are rejected under 35 U.S.C. 103(a) as being unpatentable over Benda (USPN 5427733) in view of Herfurth (DE 19533960, of record). **As to Claim 1**, Benda teaches a method for producing a work piece by the successive compacting by electromagnetic radiation of powdered starting material in horizontal layers (3:66-4:40), each layer consisting of a horizontal surface and two substantially vertical lateral faces which form the basis for a possible subsequent layer (Fig. 2, Item 63 and 1:45-57). The part being surrounded by powder during fabrication would be an inherent aspect of the selective laser sintering process taught by Benda. Benda is silent to the mechanical finishing aspects sought in the instant claims. However, they would have been prima facie obvious over Herfurth, who teaches intermediate mechanical finishing of the n^{th} layer after generation of the $n + x^{\text{th}}$ layer, and not being performed at the same time as mechanical finishing of the n^{th} layer (Fig. 11, and 13:53-14:33). In the combination, there is no teaching from the art that one should remove the powder between layers, and it would have been obvious to keep the powder in place to avoid the time wasted in removal of the powder. It would have been prima facie obvious to one of ordinary skill in the art at the time of the invention to incorporate the method of Herfurth into that of Benda in order to save time by combining or simultaneously performing the compacting and milling steps, and to maintain an enlarged projecting edge to serve as a base for subsequent coating steps and retain heat. **As to Claims 2, 4, and 5**, Herfurth's method fulfills the limitation of producing at least one further layer between the production of a layer and the mechanical finishing of it (Claim 2), several layers form a package (Claim 4), and mechanical finishing of a previous layer after the generation of the proceeding layer (Claim 5). **As to Claim 7**, Benda teaches providing at least

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one first horizontal layer of powdered starting material (1:54-65), compacting with a laser to form vertical lateral faces (1:66-2:23 and Fig. 2, Items 73 and 64), providing at least one second horizontal layer of powdered starting material (1:34-65, the process is repeated by Benda), and compacting with a laser to form a second trace with vertical faces (1:34-65 and Fig. 2, Items 73 and 64), the article remaining at all times surrounded by powder. Benda is silent to the mechanically finishing. However, Herfurth teaches mechanically finishing vertical sidewalls of the first trace but not the sidewalls of the at least second trace, while the at least one first trace (Fig. 11, and 13:53-14:33). In the combination, there is no teaching from the art that one should remove the powder between layers, and it would have been obvious to keep the powder in place to avoid the time wasted in removal of the powder. It would have been prima facie obvious to one of ordinary skill in the art at the time of the invention to incorporate the method of Herfurth into that of Benda in order to save time by combining or simultaneously performing the compacting and milling steps, and to maintain an enlarged projecting edge to serve as a base for subsequent coating steps and to retain heat in the part. **As to Claim 8**, Benda teaches that the process of providing powdered material and compacting should continue repeatedly, but is silent to the mechanical finishing of the vertical sidewalls of the second trace. However, Herfurth teaches providing a third layer and finishing the vertical sidewalls of the second trace. In the combination, there is no teaching from the art that one should remove the powder between layers, and it would have been obvious to keep the powder in place to avoid the time wasted in removal of the powder. It would have been prima facie obvious to one of ordinary skill in the art at the time of the invention to incorporate the method of Herfurth into that of Benda in order to save time by combining or simultaneously performing the compacting and milling steps, and to

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maintain an enlarged projecting edge to serve as a base for subsequent coating steps and to retain heat in the part.

5. **Claim 3** is rejected under 35 U.S.C. 103(a) as being unpatentable over Benda (USPN 5427733) in view of Herfurth (DE 19533960, of record), and further in view of Prinz (5207371). Benda and Herfurth teach the subject matter of Claim 1 above under 35 USC 103(a). **As to Claim 3**, Benda appears to be silent to the simultaneous finishing of several layers. However, Prinz teaches that multiple layers of a layered part can be milled simultaneously (Abstract). It would have been prima facie obvious to one of ordinary skill in the art at the time of the invention to incorporate the method of Prinz into that of Benda in order to reduce the number of machining passes or to produce any desired configuration or contour (Prinz, 6:5-8) including undercuts and irregular shapes (Prinz, 3:30-31).

Response to Arguments

6. Applicant's arguments filed 5 July 2006 have been fully considered but they are not persuasive. The arguments appear to be on the following grounds:

a) Prinz teaches finishing either after each layer is formed or after all layers have been made, and the timing of the finishing steps in this application are different in that the first layer is finished after the second layer has been formed, but that finishing of the second layer is not performed at the same time.

b) Neither reference suggests or teaches to finish the part while surrounded by powdered starting material.

c) There is no motivation for the modification/combination, and Applicant's method would be generally understood to be undesirable since the traditional tools for mechanical finishing are larger than Applicant's tools, typically having a diameter of about 0.5 mm.

7. These arguments are not persuasive or are moot for the following reasons:

a) The argument against Prinz's failure to teach the particular order of steps is persuasive, but moot, in view of the reference cited in the rejection above. This new reference was cited by Applicant's IDS prior to prosecution of the case.

b and c) Firstly, the particular milling tool argued has not been claimed, and any arguments drawn to the tool would not be commensurate with the subject matter claimed at this time. With regard to the alleged lack of motivation, the Examiner asserts that simultaneous performance of processes in order to save time would have motivated one to make the combination set forth previously, or the combination in the rejection above. Disturbance of the powder is cited as the reason that there would be not motivation, however, the arguments do not appear to consider Benda's teaching that the roller (Fig. 1, item 68) reapplies powder before each step of compacting with radiation, and would therefore appear to resolve any powder disturbances immediately prior to each laser cycle.

Conclusion

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew J. Daniels whose telephone number is (571) 272-2450. The examiner can normally be reached on Monday - Friday, 8:00 am - 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christina Johnson can be reached on (571) 272-1176. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MJD 9/21/06




CHRISTINA JOHNSON
PRIMARY EXAMINER
9/15/06